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MARKETING/FARM SUPPLY COOPERATIVES: #6
MEMBERSHIP AND USE, 1978 /#C

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ESCS Staff Report
August 1980

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Cooperative Management I

U. S. Department of Agriculture, Washington, D.C.

Staff Report.

1978. Paul C. Wilkins.

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ABSTRACT

Thirty-eight percent of all farmers belonged to marketing/farm supply cooperatives in 1978. Another twenty-five percent were nonmember patrons, but contributed little to cooperative volume. Cooperative membership was highest among dairy farmers and large farm operators and lowest among livestock farmers and small farm operators. Most cooperative members, however, were livestock farmers and operated medium sized farms. Member patrons marketed most of their major crops and purchased most of their major farm supplies cooperatively. Member patrons with the largest sized farms purchased a smaller portion of their farm supplies cooperatively than did the smaller farm operators.

Keywords: Cooperatives, membership-characteristics, farmer-use-of-cooperatives.

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CONTENTS

	Page
Highlights	i
Introduction	1
Farmer Cooperative Membership	2
Farm Classification	3
Farm size	5
Age of Operator and Tenure	6
Composition of Membership	8
Cooperative Marketing	10
All Farmers	10
Member Patrons	11
Cooperative Purchasing	14
All Farmers	14
Member Patrons	19
Nonmember Patrons	22
Further Research Needed	24
Appendix	26
Definitions	26
Survey Description	28
Tables	29

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HIGHLIGHTS

Thirty-eight percent of all farm operators were members of one or more marketing/farm supply cooperatives in 1978; 25 percent were nonmember patrons.

The Northern Plains had the highest percentage of members--67, and the South Central had the lowest with 24 percent. The latter also had the highest nonmember patrons with 36 percent.

Dairy farmers had the highest level of membership (78 percent) and were the most frequent holders of multiple memberships.

Seventy percent of the largest farmers (farm sales of \$40,000 or more) held cooperative memberships compared with 42 percent for those with sales of \$2,500 to \$39,999 and only 20 percent for those with sales under \$2,500. The highest level of cooperative membership was in the Lake States among dairy farmers (87 percent) and farmers with sales of \$40,000 or more (86 percent).

Middle-aged farmers, 34 to 54 years old, had the highest percentage of cooperative membership (44 percent), while farmers 55 years and older had the lowest (33 percent).

Both owners and tenants reported about the same level of cooperative membership.

The makeup of total cooperative membership was determined more by the number of farmers in any group or category than by the percent of such farmers that held membership. The largest portion of cooperative memberships was held by livestock farmers, farmers with sales of \$2,500 to \$39,999, and those in the 34-54 age group.

Fifty-three percent of dairy farmers, 28 percent of cash grain farmers, and 4 percent of livestock farmers marketed some of their principal crops or commodities through cooperatives in 1978. The average for the three groups was 16 percent. Almost all farmers selling any of their principal crop cooperatively marketed more than 30 percent of that crop through cooperatives. Almost all dairy and about two-thirds of the cash grain and livestock members marketed 90 percent or more of their principal crop cooperatively. Only 7 percent of all nonmember patrons marketed any of their major crop cooperatively.

A relatively small percentage of all farm operators reported purchasing major farm production supplies from cooperatives in 1978. Twenty-five percent purchased fertilizer; 22 percent, feed; 18 percent, seed; and 17 percent, petroleum products.

Half of all dairy farmers, but only 23 percent of livestock farmers, purchased feed cooperatively. Thirty-five percent of cash grain farmers purchased fertilizer, 26 percent bought petroleum, and 22 percent bought seed cooperatively.

Small farm operators were least likely to purchase these four major supplies cooperatively but those that did tended to buy a larger percentage of their total requirements from cooperatives than did larger operators. The largest sized farm operators were by far the most likely to purchase supplies from cooperatives, but more frequently bought a smaller percentage of their needs, especially feed and seed, from this source than did the small farmers. There was little difference in use of supply cooperatives among different age groups.

Fifty-four percent of all member patrons of supply-handling cooperatives bought fertilizer from this source in 1978. The percentage for feed was 47; for seed, 39; and for petroleum, 38.

As might be expected, dairy and livestock farmer members were the main types that bought feed, and cash grain farmer members were the main type that bought fertilizer and petroleum.

Only 10 to 18 percent of nonmember patrons purchased any of the four major supply items handled by cooperatives. This suggests that most nonmember patrons limited their purchases to other supplies, such as building materials, containers, and hardware.

MARKETING/FARM SUPPLY COOPERATIVES:

MEMBERSHIP AND USE, 1978

by

Paul C. Wilkins*

INTRODUCTION

This study identifies some of the major characteristics of farmer members of marketing/farm supply cooperatives in 1978. 1/ Selected information was also obtained on the use of these cooperatives by member and nonmember patrons.

About 6,700 marketing/farm supply cooperatives served farmers in the 48 contiguous States in 1976-77. About 4,600 of these cooperatives marketed farm products valued at \$32.1 billion and 5,300 provided farm production supplies valued at \$10.6 billion. 2/ The major farm products marketed were grain, soybeans and soybean products, dairy products, fruits and vegetables, and livestock and livestock products. These farm products accounted for 84 percent of the net cooperative marketing volume in 1976-77. 3/

The major farm supplies sold were feed, fertilizer, and petroleum products--accounting for 74 percent of net cooperative farm supply sales.

*/ The author is a senior agricultural economist with the Cooperative Management Division; Economics, Statistics, and Cooperatives Service; U. S. Department of Agriculture.

1/ See "Definitions" in the appendix.

2/ The value of farm products marketed and farm production supplies sold excluded intercooperative business transactions.

3/ NEWS, "Farmer Cooperative's Business Up, USDA Data Shows," U. S. Department of Agriculture, USDA 1417-80.

The number of farms by farm classification and gross farm sales as used in this study are shown by regions in appendix tables 1 and 2. The States comprising the six regions are shown in the figure. Method of conducting the study as well as sampling variability of membership estimates are described under "Survey Description" also found in the appendix.

FARMER COOPERATIVE MEMBERSHIP

Thirty-eight percent of the 2.7 million farm operations 4/ reported they were members of one or more cooperatives in 1978. 5/ An additional 25 percent reported they were patrons but not members of a cooperative. Thus, 63 percent of all farm operators were either member or nonmember patrons of at least one marketing/farm supply cooperative (table 1).

Table 1--Farm operators reporting cooperative membership and nonmember patron status by region, 1978

Region	:	Member	:	Nonmember patron	:	Total
	:		:		:	
	:		:	<u>Percent</u>	:	
Eastern	:	33	:	24	:	57
Lake States	:	55	:	20	:	75
Corn Belt	:	42	:	26	:	68
Northern Plains	:	67	:	18	:	85
South Central	:	24	:	36	:	60
Western	:	32	:	16	:	48
United States	:	38	:	25	:	63

4/ U. S. Department of Agriculture; Economics, Statistics, and Cooperatives Service, Farm Numbers SpSy 3 (12-78).

5/ As used in this report, cooperative memberships refer to memberships held in marketing/farm supply cooperatives. Excluded are memberships held in other rural cooperatives. See "Definitions" in the appendix.

It is probable that some of these farmers classifying themselves as nonmember patrons were considered members by the cooperatives they patronized. Some of the reasons why farmers may have identified themselves as nonmember patrons in 1978 while still defined as members by the cooperatives include: (1) they were inactive or infrequent patrons of the cooperative in 1978, (2) they marketed small quantities of agricultural products or purchased only incidental supplies from the cooperative during that year, (3) they were unaware that doing business with some cooperatives qualifies them automatically for membership, and (4) they did not participate in the cooperative's business affairs (attend annual meetings, votes for board members, and the like).

The estimates of farmers' membership are understated to the extent that farmers held memberships in cooperatives but considered themselves nonmember patrons. Where practical, in those sections of this report dealing with farmers' marketing and purchasing activities, information from farmers reporting membership are combined with those reporting nonmember patronage to provide an estimate of all farmers' use of cooperatives. Information then follows on marketing and purchasing activities of member patrons.

Farm Classification

The number of farmers holding cooperative memberships varied widely depending on the type of farm operated. 6/ Dairy farmers reported the highest level of membership and were the most frequent holders of multiple memberships (table 2).

6/ Farms were classified as cash grain, livestock, dairy, and other. The farming activity producing the most gross farm sales in 1977 determined each farm's classification.

Table 2--Farm operations reporting number of cooperative memberships,
by farm classification, 1978

Farm classification	Memberships				Total
	1	2	3 or more		
	<u>Percent</u>				
Cash grain	30	13	4		47
Livestock	24	6	2		32
Dairy	37	24	17		78
Other	21	7	1		29
Average	25	9	4		38

Four in ten dairy farmers reported multiple memberships while only one in ten of all other types of farmers reported such multiple memberships.

Regionally, farmers in the Northern Plains had the highest level of cooperative memberships (table 3).

Table 3--Farm operators reporting cooperative membership by farm
classification and region, 1978

Farm classification	Eastern	Lake States	Corn Belt	Northern Plains	South Central	Western	United States
	<u>Percent</u>						
Cash grain	29	44	48	73	37	50	47
Livestock	31	48	39	63	19	23	32
Dairy	71	87	65	80	65	60	78
Other	29	27	<u>1/</u>	<u>1/</u>	30	37	29
Average	33	55	42	67	24	32	38

1/ Insufficient data.

This is attributed to the high level of such memberships among cash grain and livestock farmers--the principal farm enterprises in the region.

Such farmers were twice as likely to hold cooperative memberships in the Northern Plains as were such farmers in the rest of the country. In contrast, the very low level of membership in the South Central region resulted largely from the low percentage of livestock farmers reporting cooperative memberships (19 percent) while comprising 70 percent of all farmers in that region.

Farm Size

The greatest difference in the level of cooperative memberships occurred among farmers with large gross farm sales compared with those having small sales. Only one in five farmers with sales of under \$2,500 reported any memberships and most of these reported single memberships (table 4).

Table 4--Farm operators reporting number of cooperative memberships,
by gross farm sales, 1978

Gross sales	Memberships			
	1	2	3 or more	Total
Less than \$2,500	16	4	<u>1/</u>	20
\$2,500-39,999	29	10	3	42
\$40,000 and over	37	22	11	70
Average	25	9	4	38

1/ Less than 0.5 percent.

In contrast, 70 percent of the farmers with sales of \$40,000 and over held cooperative memberships and nearly half of these held multiple memberships. Comparison of memberships of farmers with sales of \$40,000 to \$99,999 with those with sales of \$100,000 and over showed essentially the same level of total membership as well as frequency of multiple memberships.

Cooperative memberships were relatively low for operators of all size farms in the South Central and Western regions (table 5).

Table 5--Farm operators reporting cooperative membership, by region and gross farm sales, 1978

Gross farm sales	Eastern	Lake States	Corn Belt	Northern Plains	South Central	Western	United States
				<u>Percent</u>			
Under \$2,500	22	32	17	<u>1/</u>	13	20	20
\$2,500-\$39,999	37	54	43	67	30	36	42
\$40,000 and over	70	86	70	79	50	52	70
Average	33	55	42	67	24	32	38

1/ Insufficient data.

This can be attributed in part to the large proportion of farms in these regions that are livestock farms and the generally low level of membership among livestock farmers.

Farmers in the Lake States with sales of \$40,000 or more reported the highest level of cooperative membership--86 percent compared with an average of 67 percent for this size of farm operator throughout the rest of the country. Also, in the Lake States, dairy farm comprised 29 percent of all farms compared with 6 percent for all other regions. It is probable that many of the farms with sales of \$40,000 and over in the Lake States are dairy farms and account for much of the high level of cooperative membership among farm operators in that region.

Age of Operator and Tenure

Farmers in the 34 to 54 year age group had the highest level of cooperative membership (44 percent) and were the most frequent holders of multiple memberships (table 6).

Table 6--Farm operators reporting number of cooperative memberships, by age group, 1978

Age group	:	Memberships			
	:	1	: 2	: 3 or more	: Total
	:				
	:				
	:				
	:				
Under 34	:	25	8	4	37
	:				
34-54	:	29	10	5	44
	:				
55 and over	:	22	8	3	33
	:				
Average	:	25	9	4	38
	:				

Cooperative membership was particularly low in the 55 year and older group with only one in three reporting such membership.

A possible explanation for the low level of membership among these older farmers might be inferred from the characteristics of the farms in those regions where most of these older farmers live. Nearly 60 percent of all farmers 55 years and older live in the Eastern, South Central, and Western regions. 7/ These same regions are also characterized by a high proportion of farms with sales of under \$2,500 (47 percent) compared with the other regions (25 percent). Further, in the same three regions 82 percent of the farms are classified as livestock or "other" farms (farms other than cash grain, livestock, and dairy) while only 49 percent of the farms are so classified in the other regions.

Both small farm operators and operators of livestock and "other" farms reported low levels of cooperative membership. Thus, it could be that the low level of membership among older farmers may result from a high proportion of these farmers operating either small farms or livestock and "other" farms, or both.

7/ 1974 Census of Agriculture.

Table 8--Farm operators reporting cooperative memberships, by farm classification, farm size, and age of operator, and the relative importance of each in overall cooperative memberships, 1978

Category	:	Farm operators	:	Cooperative memberships
	:		:	
	:		:	
	:		:	
	:		:	
Farm classification:	:		:	
	:		:	
	:		:	
Cash grain	:	47	:	30
Livestock	:	32	:	36
Dairy	:	78	:	18
Other	:	29	:	16
	:		:	
	:		:	
Average/Total	:	38	:	100
	:		:	
	:		:	
Farm size:	:		:	
	:		:	
	:		:	
	:		:	
Under \$2,500	:	20	:	17
\$2,500-\$39,999	:	42	:	48
\$40,000 and over	:	70	:	35
	:		:	
	:		:	
Average/Total	:	38	:	100
	:		:	
	:		:	
Operator's age:	:		:	
	:		:	
	:		:	
Under 34	:	37	:	12
34-54	:	44	:	50
55 and over	:	33	:	38
	:		:	
	:		:	
Average/Total	:	38	:	100

The highest level of cooperative membership was among dairy farmers and farmers with gross farm sales of \$40,000 and over. The greatest portion of total cooperative memberships, however, were livestock farmers and farmers with gross sales of \$2,500 to \$39,999. Farmers in the 34-54 year age group had the highest level of cooperative membership and were also most important in the total cooperative membership population.

COOPERATIVE MARKETING

Information was obtained on the percentage of cash grain, livestock, and dairy farmers that marketed at least part of their major farm commodity cooperatively. 10/ Information was also obtained on the shares of the major farm commodities marketed cooperatively by the cash grain, livestock, and dairy farmers that were member patrons of marketing cooperatives.

All farmers

The portion of all farmers using marketing cooperatives to market their principal crop varied widely by region and farm classification (table 9).

Table 9--Farm operators marketing part or all of their major crop through a cooperative, by region and farm classification, 1978

Farm classification	Eastern	Lake States	Corn Belt	Northern Plains	South Central	Western	United States
				Percent			
Cash grain	1/	42	29	55	17	33	28
Livestock	1/	16	5	5	2	1	4
Dairy	47	62	49	39	56	48	53

1/ Insufficient data.

Operators of the three farm classifications reported an average of 16 percent marketing some of their major crop cooperatively--ranging from 4 percent for livestock farmers to 53 percent for dairy farmers. Regionally, 5 percent of the farmers in the South Central region and 41 percent of those in the Lake States region used a marketing cooperative to market part or all of their principal crop.

10/ The major farm commodities for the three farm classifications are: corn, soybeans, sorghum and/or small grains for cash grain farms; all types of livestock, except poultry, for livestock farms; and milk for dairy farms.

Table 11--Member patrons marketing part or all of major commodity
cooperatively by percentage marketed cooperatively
and farm classification, 1978

Farm classification	:	Percent marketed cooperatively						
	:	1-29	:	30-59	:	60-89	:	90 or more
	:							
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1/ Insufficient data.

These differences result, in part, from the structure of the marketing system through which these commodities moved and from the nature of the commodities themselves.

Dairy farmers that market their milk cooperatively tend to market nearly all of their milk in this fashion due to the perishability of the commodity and the structure of the industry that requires farmers to market milk on a continuous basis (every day or two) while being paid periodically (once or twice a month). Livestock and cash grain farmers, however, can market their output in discrete amounts and have some discretion as to time of marketing. Furthermore, they usually have several outlets, in addition to the cooperative, to which they can sell their farm output.

Farm size

About the same proportions of member patrons with sales of \$40,000 and over decided to sell 90 percent or more of selected commodities cooperatively as did the smaller volume farmers (table 12).

Table 12--Portion of member patrons marketing 90 percent or more of indicated crop through a marketing cooperative, by size of farm sales, 1978

[illegible]

However, there is an exception to this in the marketing of livestock.

Two-thirds of the livestock member patrons with sales of under \$40,000 marketed most (90 percent or more) of their livestock cooperatively, while only about half of those member patrons with sales of \$40,000 or more used their marketing cooperatives this intensively. This suggests that livestock marketing cooperatives may be better designed to serve smaller farmers and that larger livestock producers have better access to alternative outlets and tend to use them for a greater portion of their livestock marketing.

Age of Operator

The portion of member patrons marketing 90 percent or more of selected commodities cooperatively varied somewhat by the age of the operator, but the variation, generally, was not of major significance (table 13).

Table 13--Portion of member patrons marketing 90 percent or more of indicated crop through a marketing cooperative, by age of operator, 1978

Age of operator	Corn, sorghum, and small grain	Soybean	Livestock	Milk
	<u>Percent</u>			
Under 34	66	71	<u>1</u> /	99
34-54	65	79	52	98
55 and over	70	78	62	100
Average	68	77	58	99

1/ Insufficient data.

While the older operators, those 55 years and older, were somewhat more likely to market 90 percent or more of these commodities than were the younger operators, the difference was significant only for operators of livestock farms.

COOPERATIVE PURCHASING

The extent farm operators use cooperatives to obtain their farm production supplies also varies by type of farm, size of farm, age of farm operator, and type of farm supply. Information was obtained on farmers' purchases of four major farm supplies handled by cooperatives--feed, seed, fertilizer, and petroleum products.

All farmers

Fertilizer was purchased from cooperatives by one-fourth of all farm operators, feed by one-fifth, and seed and petroleum products by about one-sixth (table 14).

Table 14--Farm operators purchasing supplies, through cooperatives
by farm classification, 1978

Supply and farm classification	Percent of purchases		
	None <u>1/</u>	1-29	30 or more
		<u>Percent</u>	
Feed:			
Cash grain	83	3	14
Livestock	77	5	18
Dairy	50	11	39
Other	85	3	12
Average	78	5	17
Seed:			
Cash grain	78	5	17
Livestock	86	2	12
Other	79	4	17
Average	82	3	15
Fertilizer:			
Cash grain	65	2	33
Livestock	81	1	18
Other	74	2	24
Average	75	2	23
Petroleum:			
Cash grain	74	3	23
Livestock	86	2	12
Other	86	2	12
Average	83	2	15

1/ Includes operators not purchasing farm supplies from any source.

Half of all dairy farmers, but only 23 percent of livestock farmers, purchased feed cooperatively. Thirty-five percent of all cash grain farmers purchased fertilizer, 26 percent purchased petroleum products, and 22 percent bought seed cooperatively.

The portion of farmers that purchase any particular supply item cooperatively is determined by several factors including availability of the item from a cooperative in the area, the farmer's decision to purchase the item from other than a cooperative source, and the farmer's need for the particular supply item in his farm operation. The low percentage of cash grain farmers that purchase feed and livestock operators that purchase seed and petroleum products cooperatively probably reflects all three reasons; with lack of need for the particular item being of major importance.

The portion of farm operators that purchased cooperatively one or more of the four major supply items varied significantly by size of farm operation. Farmers with sales of under \$2,500 were least likely to purchase any of the supply items cooperatively (table 15). Those that did, however, tended to purchase a larger portion of their total requirements from a cooperative than did the larger farm operators.

The largest farm operators (sales of \$40,000 or more), were by far the most likely to use a cooperative to obtain these four production supplies. But, they more frequently purchased less than 30 percent of these supplies from a cooperative than did the small operators. This was particularly the case for feed and seed. About a third of the large operators purchasing feed and seed from a cooperative obtained less than 30 percent of these supplies from that source. However, large farm operators cooperatively obtained a much larger share of their fertilizer and petroleum needs. Better than 85 percent of them reported 30 percent or more of total purchase of these items from cooperatives.

Table 15--Farm operators purchasing supplies through cooperatives, by range of gross sales, 1978

Commodity and gross sales	Percent of purchases		
	None <u>1/</u>	1-29	30 or more
		<u>Percent</u>	
Feed:			
Under \$2,500	84	2	14
\$2,500-39,999	78	4	18
\$40,000 or more	65	10	25
Average	78	5	17
Seed:			
Under \$2,500	89	<u>2/</u>	10
\$2,500-39,999	80	<u>3</u>	17
\$40,000 or more	68	11	21
Average	82	3	15
Fertilizer:			
Under \$2,500	87	<u>2/</u>	12
\$2,500-39,999	72	<u>2</u>	26
\$40,000 or more	53	5	42
Average	75	2	23
Petroleum:			
Under \$2,500	93	1	6
\$2,500-39,999	82	2	16
\$40,000 or more	64	5	31
Average	83	2	15

1/ Includes operators not purchasing supplies from any source.

2/ Insufficient data.

Farmers in the three age groups exhibited no major difference in the use of cooperatives in purchasing the four supply items (table 16).

Table 16--Farm operators purchasing supplies through cooperatives,
by age of operator, 1978

Commodity and operator's age	Percent of purchase		
	None <u>1</u> /	1-29	30 or more
	<u>Percent</u>		
Feed:			
Under 34	80	5	15
34-54	74	6	20
55 and over	82	3	15
Average	78	5	17
Seed:			
Under 34	83	4	13
34-54	80	4	16
55 and over	83	3	14
Average	82	3	15
Fertilizer:			
Under 34	73	2	25
34-54	73	2	25
55 and over	78	1	21
Average	75	2	23
Petroleum:			
Under 34	82	2	16
34-54	80	3	17
55 and over	86	2	12
Average	83	2	15

1/ Includes operators not purchasing supplies from any source.

To some extent the older farmers, those 55 years and over, were less likely to purchase the four supply items cooperatively. This possibly reflects both the lower level of reported cooperative membership of this age group and the smaller percentage of these farmers that are in the market for these supplies.

Member Patrons

Over half (54 percent) of all cooperative members purchased fertilizer cooperatively in 1978. Nearly half (47 percent) also purchased feed cooperatively. A smaller percentage, under 40 percent, purchased seed and petroleum products (table 17).

Table 17--Farm supplies purchased by member patrons of cooperatives
by selected farm classification and all farms, 1978

Farm supply	Farm classification					All member patron farms
	Cash grain	Livestock	Dairy	Other		
					<u>Percent</u>	
Feed	32	56	62	36		47
Seed	37	36	<u>1/</u>	<u>2/</u> 44		39
Fertilizer	59	49	<u>1/</u>	<u>2/</u> 54		54
Petroleum	49	35	<u>1/</u>	<u>2/</u> 32		38

1/ Not available.

2/ Includes dairy farms.

Farm Classification

Over half the dairy and livestock member patrons used cooperatives to obtain feed supplies while well over half the cash grain farm members obtained fertilizer through cooperatives (table 17). Again, the portion of member patrons that purchased the four farm supplies cooperatively was determined by availability of supply from a cooperative, election to purchase from a cooperative or noncooperative source, and need for the item in the farming operation.

Member patrons that purchased specific farm supplies from their cooperative indicate they obtained most of the items from that one source (table 18). There was considerable difference, however, in the portion obtained cooperatively by operators of different sized farms.

Table 18--Portion of specified farm supplies purchased from cooperatives
by members purchasing any of the supply through a cooperative,
by type of farm, 1978

Type of farm and farm supply	Percent of purchases			
	1-29	30-59	60-89	90 and over
Cash grain farms:				
Feed	18	12	6	64
Seed	27	24	6	43
Fertilizer	7	8	6	79
Petroleum	11	11	9	69
Livestock farms:				
Feed	20	18	9	53
Seed	15	20	8	57
Fertilizer	6	9	8	77
Petroleum	13	11	14	62
Dairy farms:				
Feed	23	11	13	53

Farm Size

Among member patrons purchasing feed, seed, and fertilizer from their cooperatives, the larger the farming operation, the smaller the proportion of such items purchased (table 19). This was particularly evident in the purchase of seed. For member operators of farms with sales of under \$2,500, four out of five bought 90 percent or more of their seed cooperatively. For the largest class of operators (sales of \$40,000 or more), less than one in three bought such a large proportion. This might suggest that cooperatives generally did not handle the variety and type of seed needed by these larger operators or that cooperatives were not competitive in pricing seed to the larger operators.

Table 19--Share of specified farm supplies purchased from cooperatives
by member patron, by size of farm sales, 1978

Commodity and gross farm sales	Percent of total purchases			
	1-29	30-59	60-89	90 and over
		<u>Percent</u>		
Feed:				
Under \$2,500	13	13	7	67
\$2,500-\$39,999	19	18	7	56
\$40,000 and over	26	15	11	48
Average	20	16	8	56
Seed:				
Under \$2,500	$\frac{1}{}$	13	$\frac{1}{}$	78
\$2,500-\$39,999	14	23	8	55
\$40,000 and over	37	23	9	31
Average	19	22	8	51
Fertilizer:				
Under \$2,500	$\frac{1}{}$	10	$\frac{1}{}$	82
\$2,500-\$39,999	5	10	6	79
\$40,000 and over	11	12	8	69
Average	7	10	7	76
Petroleum:				
Under \$2,500	$\frac{1}{}$	$\frac{1}{}$	$\frac{1}{}$	67
\$2,500-\$39,999	12	13	10	65
\$40,000 and over	15	9	11	65
Average	13	11	11	65

1/ Insufficient data.

Of the four supply items, only petroleum purchases were not influenced by size of farm. Two out of three member patrons (in all size categories that purchased any petroleum products cooperatively) purchased 90 percent or more of their total requirements from this source.

Information supplied by farm operators indicates that the larger the size of the farm--as measured by gross farm sales--the greater the percentage of farm operators that purchased cooperatively some of his supply needs, particularly fertilizer and petroleum products. Nevertheless, the smaller the farm operation, the greater the portion of supplies bought cooperatively. This implies that cooperatives handling farm supplies were not as well-structured to serve all the supply needs of large farmers as they were the small farmers. Further, it implies that the large farmer may have been more rigid in the specifications of the supplies purchased as well as better able to negotiate for price and other terms of trade among other potential suppliers of the products needed.

Age of Operator

The pattern of farm supply purchases by member patrons also varied by age groups and by type of supply purchased. More older member patrons, those 55 years old and over, purchased from their cooperative a higher proportion of their total requirements of the four supply items than did the younger member patrons (table 20). The difference was greatest in the purchase of feed. Nearly two-thirds of the older member patrons purchase 90 to 100 percent of their total feed purchases from cooperatives while only about half the younger member patrons obtained such a large share of their purchased feed requirements cooperatively.

NONMEMBER PATRONS

The 25 percent of all farm operators reporting nonmember patronage of cooperatives in 1978 comprises about 40 percent of total members and nonmember patrons of these organizations. Despite their large numbers, they appear to contribute little to cooperative business volume.

Table 20--Share of specified farm supplies purchased from cooperatives
by member patron, by age group, 1978

Commodity and age group	Percent of total purchases			
	1-29	30-59	80-89	90 and over
Feed:				
Under 34	24	19	8	49
34-54	20	17	11	52
55 and over	17	14	5	64
Average	20	16	8	56
Seed:				
Under 34	23	23	6	48
34-54	19	23	8	50
55 and over	19	20	7	54
Average	19	22	8	51
Fertilizer:				
Under 34	$\frac{1}{9}$	$\frac{1}{11}$	9	76
34-54	9	11	8	72
55 and over	4	10	5	81
Average	7	10	7	76
Petroleum:				
Under 34	$\frac{1}{15}$	$\frac{1}{12}$	$\frac{1}{11}$	66
34-54	15	12	11	62
55 and over	12	10	9	69
Average	13	11	11	65

1/ Insufficient data.

Information is not available on the exact nature of their nonmember patronage, but the survey indicated it differed substantially from member patronage. Only 7 percent of all nonmember patrons marketed any part of their principal crops cooperatively compared with 32 percent for farmers holding cooperative membership.

From 10 to 18 percent of these nonmember patrons purchased any of the four major supply items handled by cooperatives while 38 to 54 percent of cooperative members made such purchases (table 21).

Table 21--Percentage of members and nonmember patrons marketing part or all of major crop and purchasing major supply items cooperatively, 1978

Item	:	Members	:	Nonmember patrons
	:		:	
	:		<u>Percent</u>	
Marketing major crop	:	32		7
Purchasing:	:			
Feed	:	47		16
Seed	:	39		13
Fertilizer	:	54		18
Petroleum	:	38		10

These findings suggest that most nonmember patrons made little or no use of the marketing services of cooperatives and tended to limit their farm supply purchases to minor cooperative farm supply items, such as building materials, machinery and equipment, containers, hardware items, and the like.

FURTHER RESEARCH NEEDED

This survey of farmer's membership in and use of marketing/farm supply cooperatives is the first undertaken among farmers on a national scale. It provides general information on the percentage of farm operators holding cooperative memberships, the frequency of multiple memberships by size and classification of farm and age of operator, the portion of the major crops marketed and major supplies purchased cooperatively by farmers patronizing cooperatives for these purposes, and the frequency of nonmembers' use of cooperatives.

Information was not obtained that would identify membership in the specific type of cooperative that such members used to market crops or procure production supplies. Also, the survey did not identify members and nonmember patrons who marketed specific commodities to (or purchased major supplies from) noncooperative sources as opposed to those that did not market such commodities to (or purchase such supplies from) any source. Also, it provided little information on the nature of nonmember business with cooperatives. Further, the survey did not obtain information on total farm sales of specific commodities or total purchases of supply items by farm operations that would indicate cooperative share of major crops marketed and supply items sold.

Additional research is needed, perhaps with a larger sample of farmers, to: (1) determine the accuracy of this study's findings on the level of cooperative membership, extent of cooperative marketing by farm classification and size, and the level of nonmember patronage and (2) obtain detailed information identifying cooperative membership with the cooperative providing the specific service or product, the nature of nonmember patronage, and the relative importance of cooperatives in marketing selected agricultural crops and providing major farm supplies.

APPENDIX

Definitions

Marketing/farm supply cooperatives. Includes farmer cooperatives that are exclusively marketing cooperatives, exclusively farm supply cooperatives, and cooperatives that both market agricultural products and provide farm supplies. Bargaining cooperatives are counted as marketing cooperatives. Also included are cooperatives that provide services relating to marketing or furnishing farm supplies such as cotton gins, rice dryers, and transportation. These cooperative organizations usually provide for one vote per member, limited return on invested capital, return of net savings to member patrons or all patrons on a patronage basis, and obtain more than half of the marketing business and farm supply business from members.

Excluded from this study are cooperatives organized by farmers to provide production services such as farm management, credit, fire insurance, electricity, irrigation, and the like. Also excluded are cooperatives providing personal services and products such as cooperative hospitals and medical clinics, burial societies, and cooperative grocery stores.

Cooperative memberships. Memberships are counted only for the responding farm operator. Excluded are memberships held by other members of the farm operator's family, other partners in a partnership operation, ex-farmers, retired farmers, and farm owners whose tenants operate farms on a share basis. For farms operated by hired managers, memberships are counted if the farm owner holds cooperative memberships.

Member patrons. Farm operators that hold membership in a marketing/farm supply cooperative and either marketed through or purchased farm supplies from a cooperative in 1978.

Nonmember patrons. Farm operators that do not hold membership in a marketing/farm supply cooperative but marketed through or purchased farm supplies from a cooperative in 1978.

Farms. Places of 10 or more acres with actual or potential annual sales of \$50 or more and places of less than 10 acres with actual or potential annual sales of \$250 or more.

Farm classification. Farms are classified by the major source of gross revenue. In this study farms are grouped into four classifications--cash grain, livestock, dairy, and other.

Survey Description

Data included in this report were based on special questions included on the December 1978 Enumerative Survey conducted by the Statistics Unit of ESCS. The basic sample was the Area Frame sample used to estimate crop 'acreages and livestock inventories at midyear. For December, a random subsample of stratified June Tracts was selected .

Approximately 9,000 farm operators were personally interviewed in December for data summarized here. Enumerators were trained prior to making the personal interviews so they could better understand precise data requested.

As not all farms were interviewed, survey estimates are subject to sampling variability. Coefficients of variation (C.V.) provide a means of evaluating survey results. The smaller the C.V., the greater the reliability of the estimate. If the C.V. of an item were 5 percent, chances are 67 out of 100 that the population value would be within 5 percent of the survey value and 95 out of 100 that it would be within 10 percent. The C.V. for percentage of farm operators reporting cooperative memberships by farm classification, gross farm sales and operators' age are shown in appendix table 3. Sampling variability for some of the more rare survey items are somewhat higher.

As in all data collected by interview, nonsampling errors can occur, resulting in omissions, duplication, or errors in the data. The errors cannot be measured directly but are minimized through rigid quality controls in the data collection and through consistency checks prior to summarization.

Tables

Appendix table 1--Farm operators by regions and farm classification, 1978

Farm Classification	: Eastern:	Lake States	: Corn Belt	: Northern Plains :	South Central:	Western:	: United States
	:		:	:	:	:	:
	:			Thousands			
Cash grain	: 123	84	241	111	56	34	649
Livestock	: 325	75	261	93	326	140	1,220
Dairy	: 60	82	31	<u>1</u> /	<u>1</u> /	10	198
Other	: 333	44	46	<u>1</u> /	78	82	601
Total	: 841	285	579	229	468	266	2,668
	:						

1/ Insufficient data.

Appendix table 2--Farm operators by region and size of farm, 1978 1/

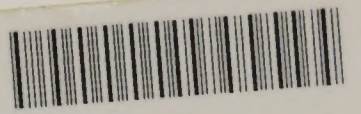
Farm size	Eastern States	Lake States	Corn Belt	Northern Plains	South Central	Western	United States
Under \$2,500	402	72	167	32	223	115	1,011
2,500-39,999	362	152	265	130	194	99	1,202
\$40,000 and over	77	61	147	67	51	52	455
Total	841	285	579	229	468	266	2,668

1/ Farm size based on gross sales in 1977.

Appendix table 3--Farm operators reporting memberships in marketing/farm supply cooperatives, by farm classification, gross farm sales, and operators' age and related coefficients of variation

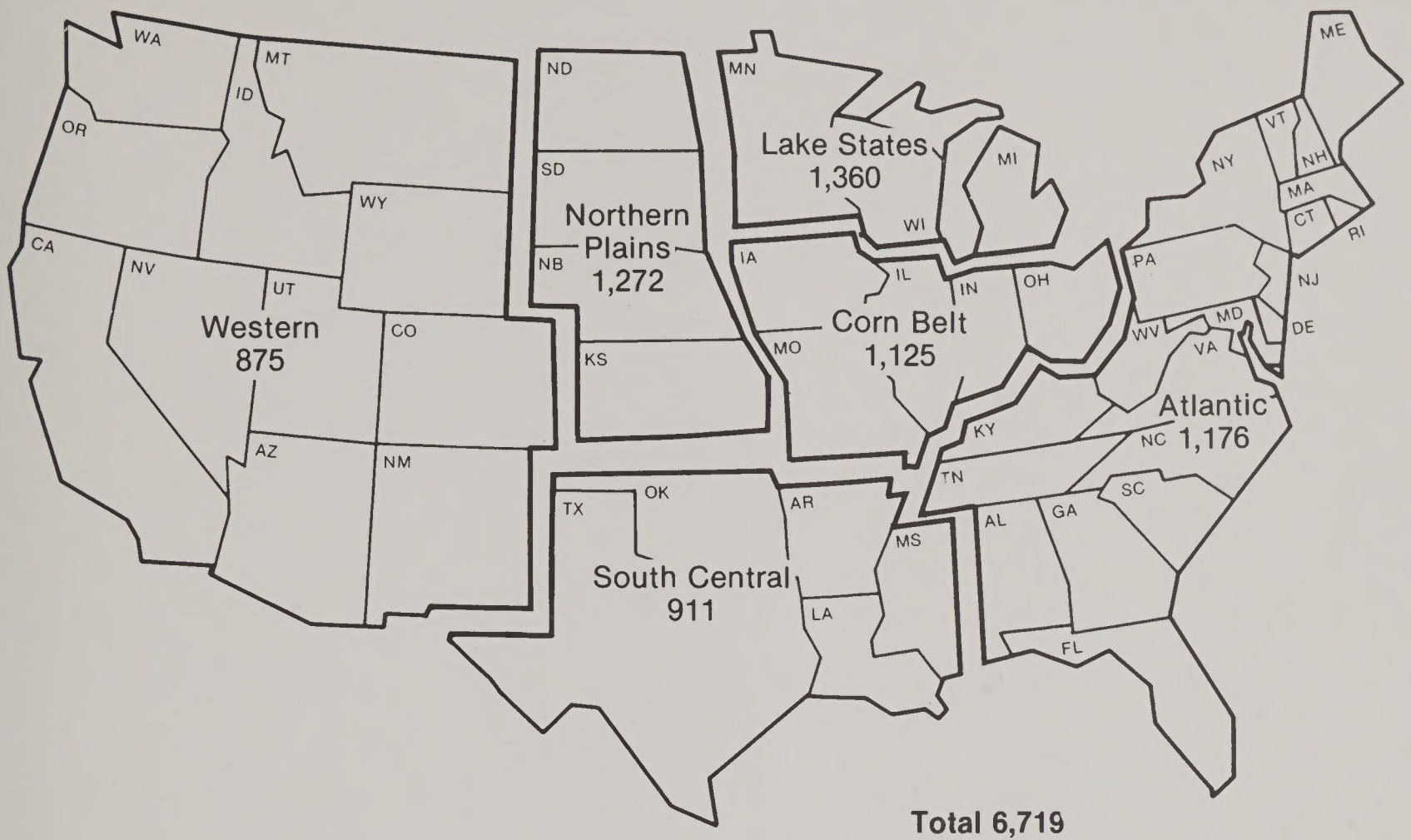
Item	Farmers reporting memberships	Coefficient of variation
		<u>Percent</u>
Farm classification:		
Cash grain	46	5.6
Livestock	32	3.1
Dairy	76	4.5
Other	29	<u>1/</u>
Gross farm sales:		
Under \$2,500	20	6.0
\$2,500-39,999	42	3.8
\$40,000 and over	69	4.7
Age of operator:		
Under 34	37	6.6
34-54	44	4.0
55 and over	33	4.1

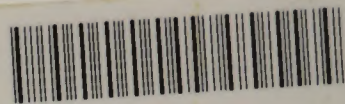
1/ Not computed.



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Marketing/farm Supply Cooperatives, by Region, 1976-77





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